or during the time necessary to fill a vessel of known capacity. From these readings the average flow per second and the difference in temperature can be determined and hence the number of calories of heat carried off by the water per second calculated. Knowing the electric current and the resistance of the heating wire, the electrical energy in Watt seconds can be calculated and the ratio of this to the heat produced gives the value of J. In place of knowing the resistance of the heating wire, the drop across the calorimeter may be obtained on a voltmeter. In our work the ordinary 110-volt direct-current circuit is used through a number of lamps, which may be connected either alone or in parallel. Various experiments may be performed with different flows and different heating currents. An alternating heating current may be equally well employed when a suitable A.C. ammeter or dynamometer is introduced.

The value of the method lies in its directness and great simplicity. No corrections are necessary for heat loss, provided the mean temperature of the flow water does not differ more than about 5 degrees from the temperature of the room, and even for larger differences the correction is very small. The object of the experiment, which is the measurement of J, is not lost sight of by the elementary student in determining troublesome corrections. A few values, taken at random from the students' results, are as follows: 4.16, 4.20, 4.12, 4.25, 4.18 joules per calorie. These were obtained with heating currents from 2 to 4 amperes. The rise of temperature ranged from 6 to 12 degrees, and the water flow was varied from 2 to 4 grams per second.

Professor Ervin S. Ferry, of Purdue University, LaFayette, Ind., writes me of the success attending the use of the calorimeter in his elementary classes. He has included an account of the apparatus and method in his recent text-book of "Practical Physics," Vol. 1. The accompanying diagram shows the general plan of the apparatus and connections.

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EVOLUTION IN RHYME

A LITTLE book has recently come into my hands that may be as new to most of the readers of SCIENCE as it is to me. It is called "Das Neue Laienbrevier des Haeckelismus," is in two parts, was published in 1878 in Berne and Leipzig, and evidently enjoyed a considerable popularity in its day, as the first part is marked, "3te Auflage." The first part is called "Genesis, oder die Entwicklung des Menschengeschlechts, nach Haeckel's Anthropogenie in zierliche Reimlein gebracht," while the second is "Exodus, oder der Auszug des Menschengeschlechts aus Lemurien, eine kritisch-analytische Komödie." The author is one Herr Reymond, and the very effective comic illustrations are by Steub, a one-time popular contributor to *Fliegende Blätter*.

The book is a burlesque in rhyme of the descent of man, and is introduced by a short statement of the history and status of the theory of organic evolution and an abstract and general table of contents of Haeckel's "Anthropogenie." The parts of the Laienbrevier are arranged exactly according to the chapters and titles of the "Anthropogenie," and the whole extremely clever *tour de force* must have been received with great glee by the anti-evolutionists, especially the anti-Haeckelians.

The contents of the book are arranged in the general form of a play with the *dramatis personæ* speaking rhymed dialogue and introducing many songs in solo or chorus, the melodies for these songs being mostly well known folk, soldier, and especially student songs. There are so many clever verses and the whole performance is so well sustained throughout the two volumes (the second was only written in response to the popular acclamation of the first) that in selecting a couple of sets of verses to illustrate the character of the Laienbrevier I have made no attempt at particular choice but have taken practically the first to attract my attention. Dissociated, however, from the well-organized total performance they give but little more than a suggestion of the entertaining character of this delightful bit of evolution literature. I

tender profuse apologies for my awkwardness in translating Herr Reymond's verses. Rhyme and rhythm are very much out of my line.

On page 119 of the first volume in the section "Vom Moner bis zur Gastraèa," Moner sings, to the melody of "Ich bin der alte Ahasver;

I am an ancient Moneron,
Derived by chance from carbon;
Dredged up from darkest of deep seas
To pose with science' garb on.

I am an ancient Moneron,
All organs sadly lacking;
No eyes or ears nor limber tongue
To keep forever clacking.

I am an ancient Moneron
Given o'er to multiplying.
O, would I had some power beside,
E'en were it that of dying!

And then Amœba comes forward and sings, to the tune of "'S ist kein schöner Leben als Studentenleben."

O, what a happy family
Are we minute Amœbæ!
In stagnant pools and slimy wells
We lay our courses creepy.

When we divide, we must endure
A protoplasmic spasm,
For unlike Moneron we have
A nucleus; quite a chasm!
Yet still we lack what we should like,
Our lowly life to aid in,
For each a kindly-hearted, fair
And true Amœba-maiden!

And so on for a score more of lines, ending with "Das Amoebenthum, es lebe hoch!"

At the end of the second volume a picture is given of the old theater *Diener* sweeping out the broken and used up properties of the play, and soliloquizing thus, as epilogue:

Completed is the comedy;
The actors pass, to no one's sorrow;
The old world stands in its same place,
And other prophets come to-morrow.

Vernon L. Kellogg
Stanford University, Cal.

A CORAL ISLAND MODEL

It is announced in the Harvard University *Gazette* that a large naturalistic model of Bora Bora, one of the Society Islands in the South Pacific Ocean, has recently been added to the exhibits in the coral room of the Museum of Comparative Zoology. The model is the gift of Mr. Alexander Agassiz and the work of Mr. George C. Curtis, whose model of the metropolitan district around Boston, in another room, is already well known to visitors to the museum. Mr. Curtis visited Bora Bora in 1904, at the suggestion of Mr. Agassiz, and spent several months there making surveys, soundings, photographs, and sketches, the results of which are now shown in the model. It is on a scale of about one and a half feet to a mile, horizontal and vertical alike, and is painted in natural colors. The central island, peopled by about 2,000 native Polynesians, is about five by three miles in diameter. It is the dissected upper portion of a great volcanic cone that here rises from the deep sea floor; a steep-walled central knob standing about 2,500 feet over sea level, and surmounting a group of radiating spurs. The foot of the heavily wooded lower slopes is lapped by the quiet waters of the lagoon, where the blue water is some fifty fathoms deep. Communication with the sea is maintained by a passage through the outlying shoals and the narrow barrier reef which forms the exterior border of the concentric island system. A little farther out the sea bottom deepens rapidly at an angle of nearly 45 degrees, and thus soon descends to a depth of 2,000 fathoms or more. The deep ocean floor would, on the scale of the model, be reached near the level of the floor of the coral room. The ocean depths immediately surrounding the reef are well suggested by the dark blue color of the outer submarine slope and by the device of placing models of vessels at sea level on fine wire supports which are hardly visible a few feet away. The use of natural colors and true proportions throughout the model makes it highly effective. By placing the eye at sea level a most realistic view of the island may be gained; the line of breakers on the outer barrier reef; the sails of boats in the lagoon, their hulls hidden by groves of palm trees; the villages at the foot